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Parikh

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(54) **PAYMENT USING UNIQUE PRODUCT IDENTIFIER CODES**

20/3276 (2013.01); **G06Q 30/06** (2013.01);
G06Q 30/0601 (2013.01)

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(58) **Field of Classification Search**

CPC **G06Q 30/0635**; **G06Q 30/0601**; **G06Q 30/06**; **G06Q 20/04**; **G06Q 20/12**; **G06Q 20/3276**

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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 464 days.

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(51) **Int. Cl.**

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G06Q 20/04 (2012.01)
G06Q 20/12 (2012.01)
G06Q 20/32 (2012.01)
G06Q 30/06 (2023.01)

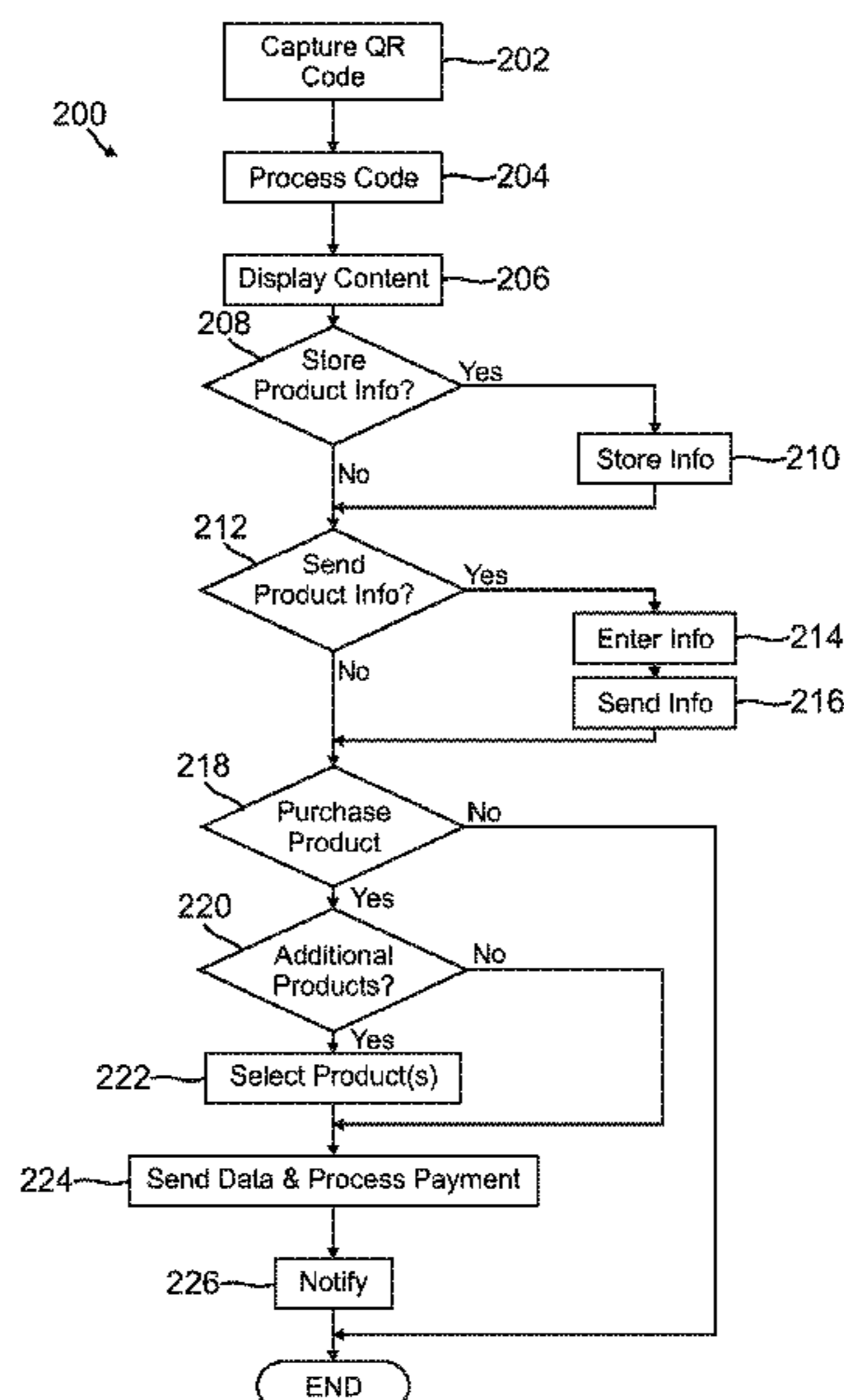
(57) **ABSTRACT**

Various methods and systems are provided to capture a unique product code, such as QR code, on a mobile device, process the information contained in the code, provide the user with options of making a purchase, including purchasing a plurality of selected products from different captured codes, and processing the payment via the user's mobile device.

(52) **U.S. Cl.**

CPC **G06Q 30/0635** (2013.01); **G06Q 20/04** (2013.01); **G06Q 20/12** (2013.01); **G06Q**

20 Claims, 5 Drawing Sheets



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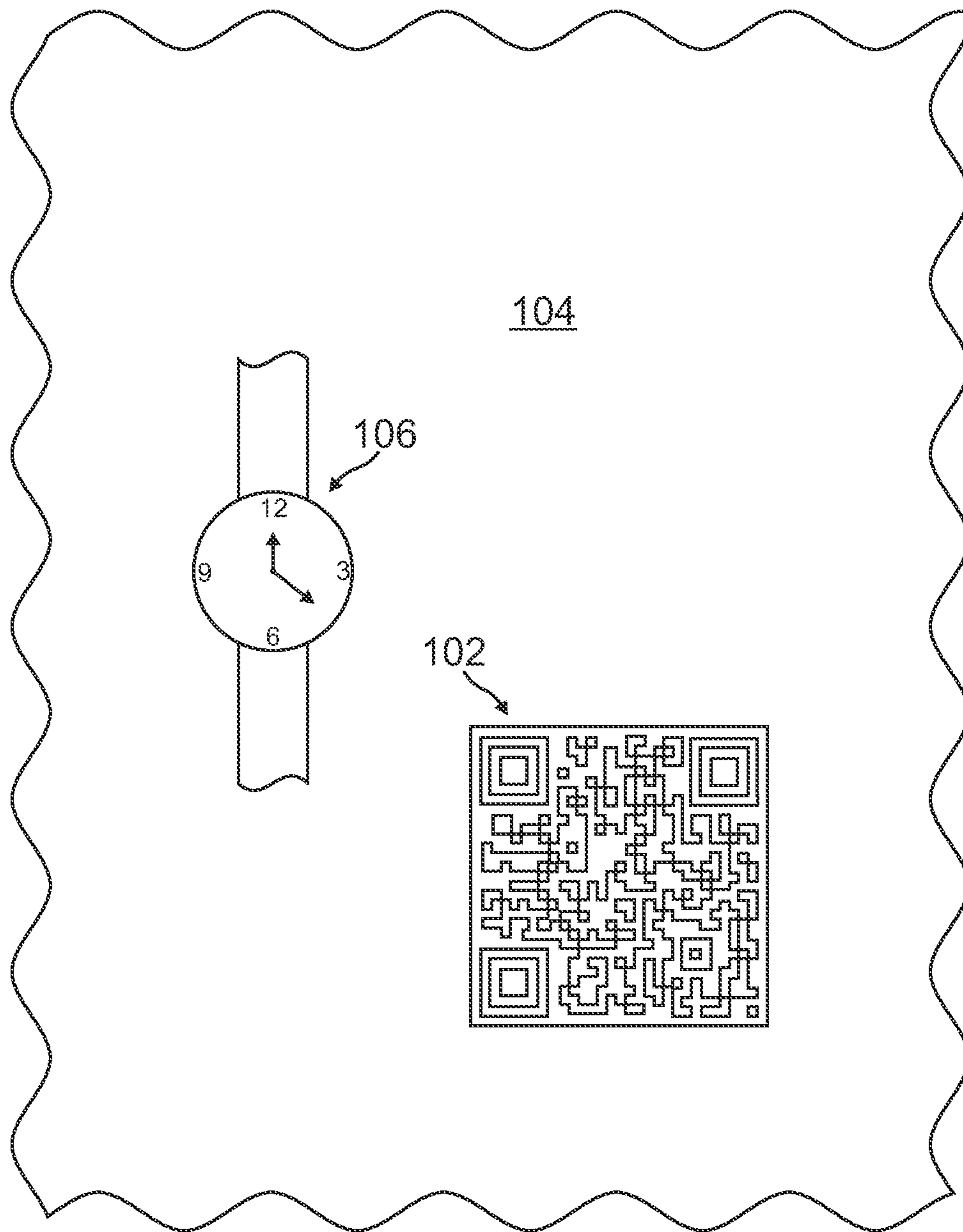


FIG. 1

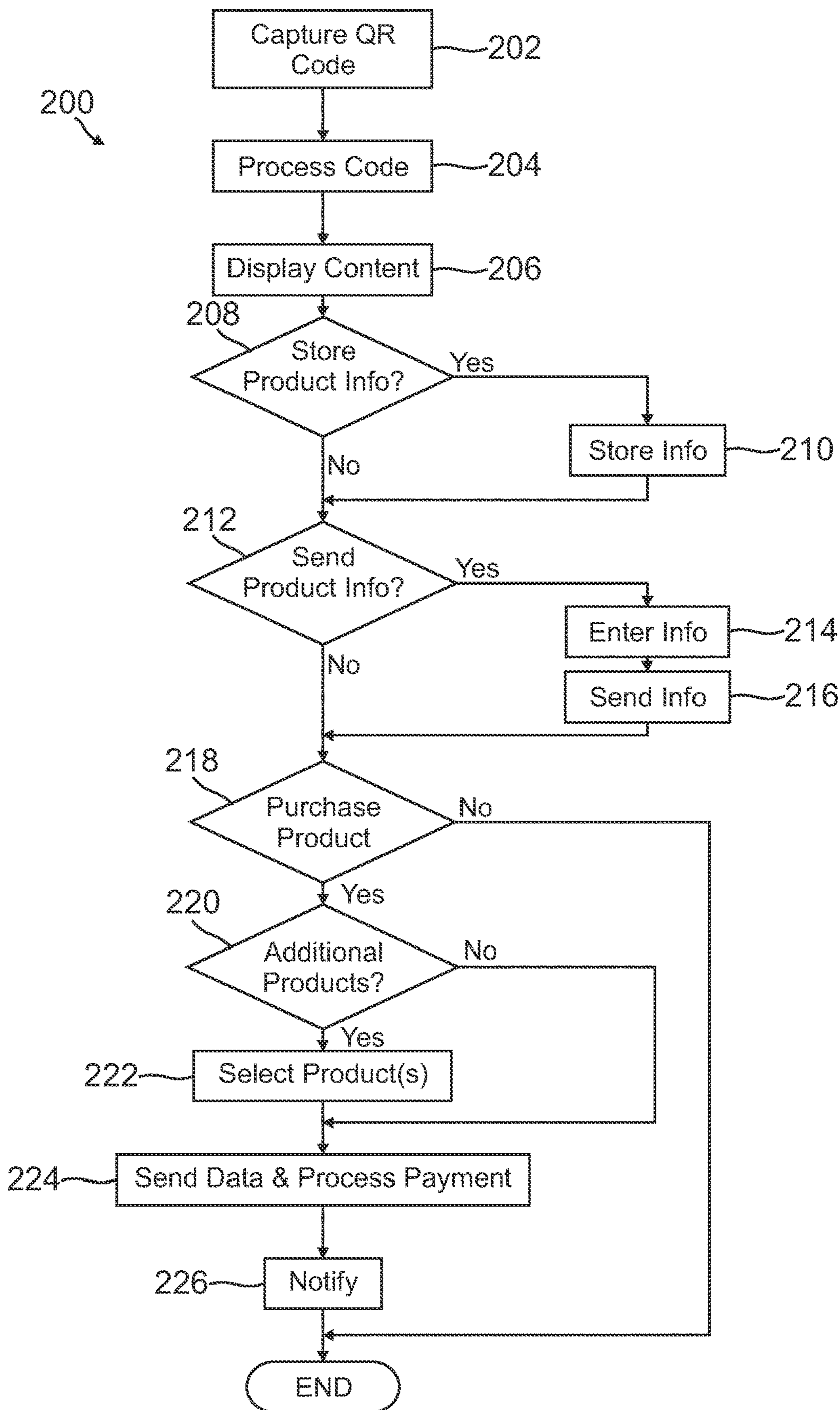


FIG. 2

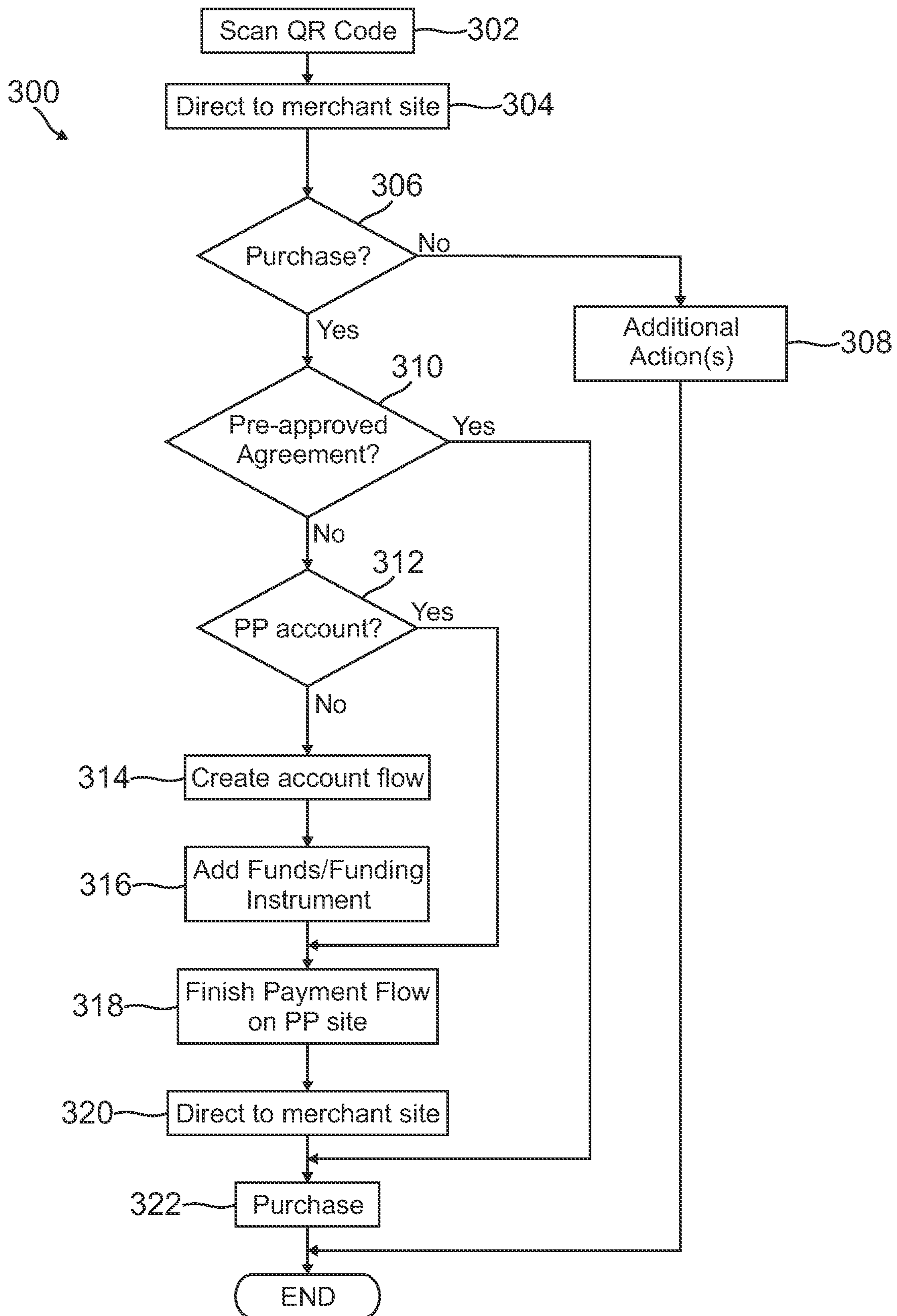


FIG. 3

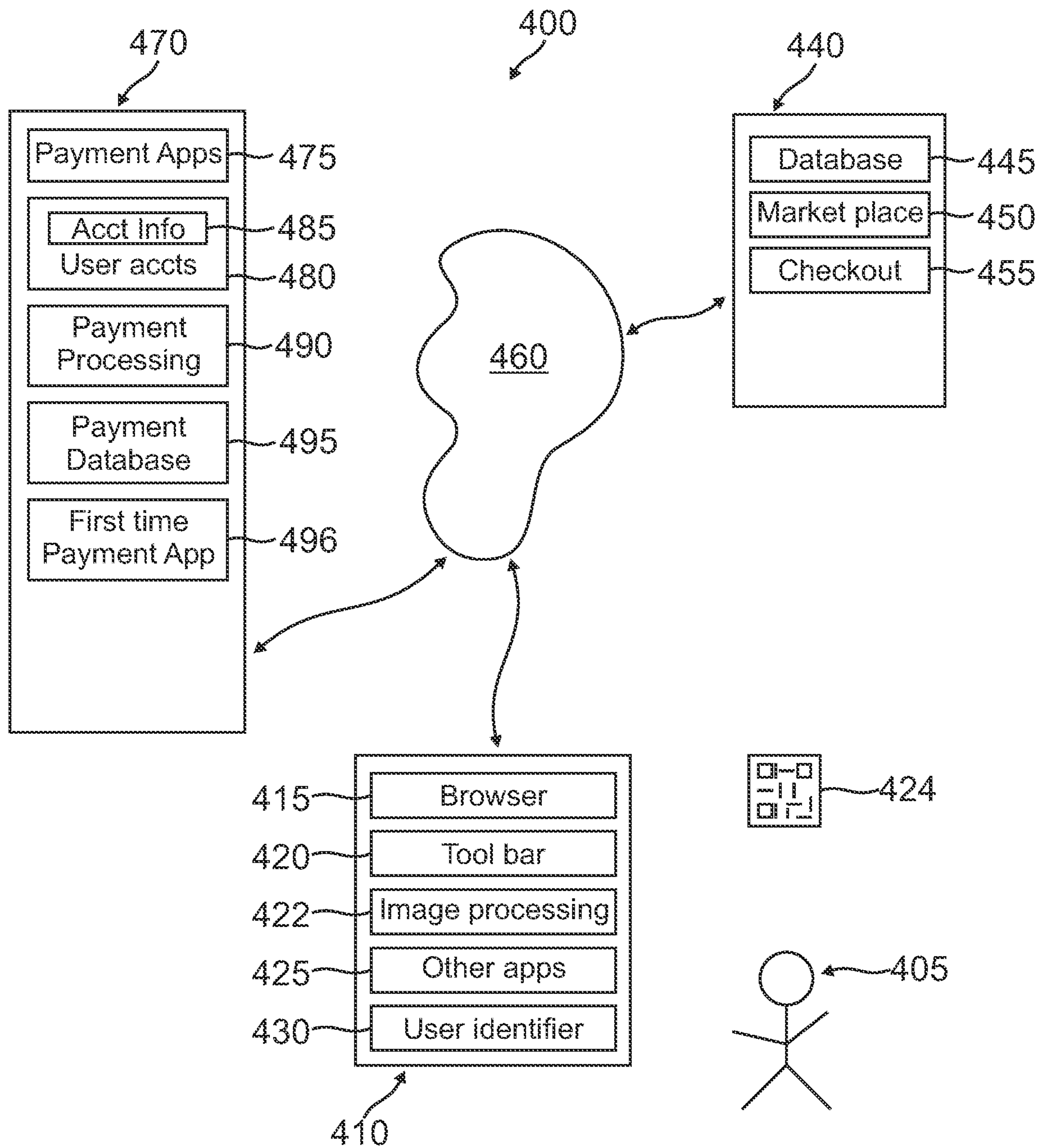


FIG. 4

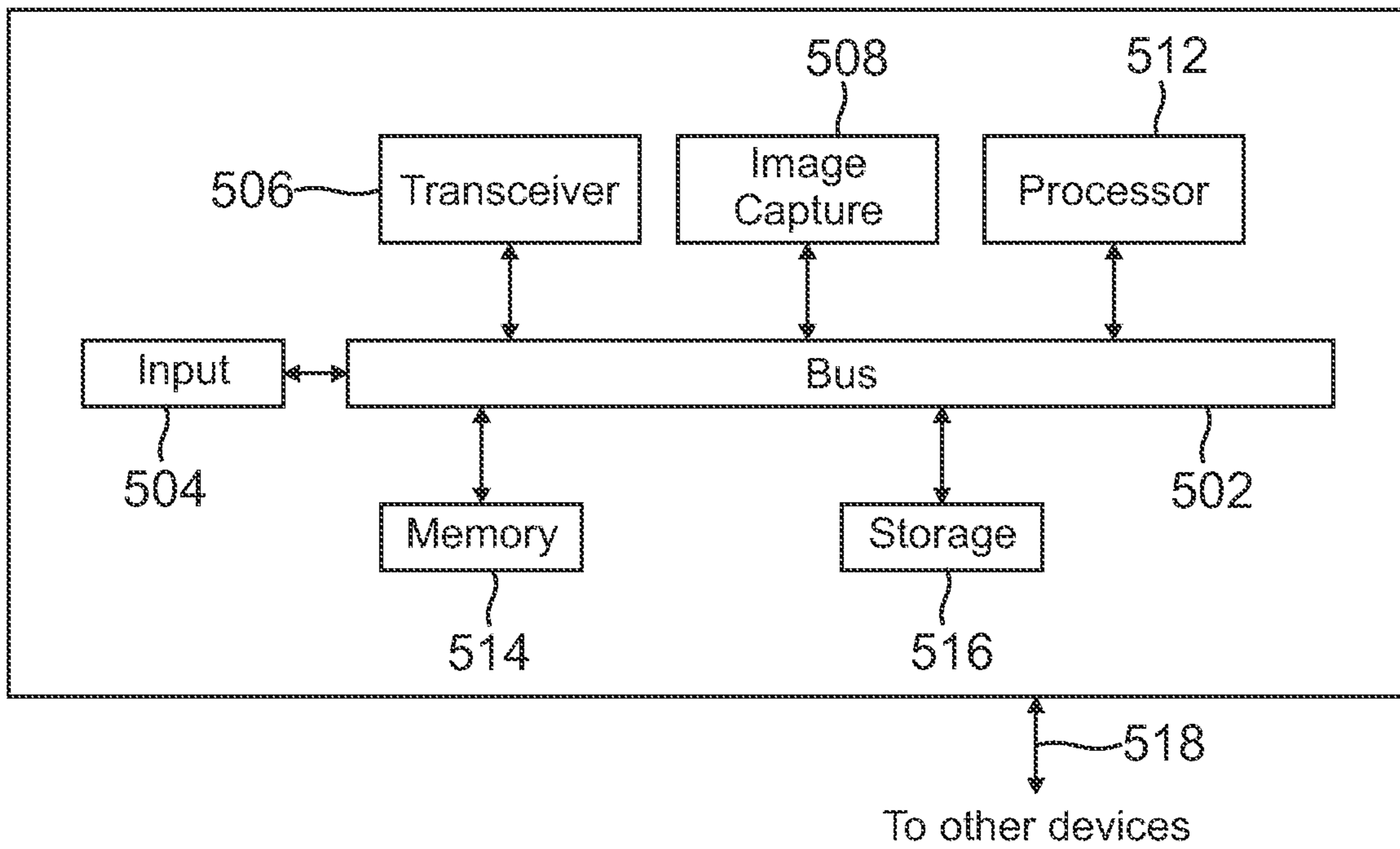


FIG. 5

PAYMENT USING UNIQUE PRODUCT IDENTIFIER CODES

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of U.S. application Ser. No. 16/050,135, filed Jul. 31, 2018, which is a continuation of U.S. application Ser. No. 14/791,063, filed Jul. 2, 2015, now U.S. Pat. No. 10,037,562 which claims priority to U.S. application Ser. No. 12/634,478, filed Dec. 9, 2009, which are herein incorporated by reference in their entirety.

BACKGROUND

Field of the Invention

The present invention generally relates to on-line payments and more particularly to making payments using a product identifier code.

Related Art

More and more consumers are purchasing items and services over electronic networks, such as the Internet. Consumers routinely search for and purchase products and services from merchants and individuals alike. The transactions can take place directly between an on-line merchant or retailer and the consumer, where payment is typically made by entering credit card or other financial information. Transactions can also take place with the aid of an on-line payment provider, such as PayPal, Inc. of San Jose, Calif. Such payment providers can make transactions easier and safer for the parties. Purchasing through the Internet from the convenience of a consumer's home, office, or virtually anywhere (with mobile devices) is one main reason why on-line purchases are growing faster and faster.

One typical way consumers locate, identify, and pay for a product is to simply go to a store, find the desired products, have the products scanned at checkout, and pay at the store, such as using cash, check, a debit card, a credit card, or vouchers/coupons. However, this requires a consumer to be at a physical point of sale (POS) and provide physical payment, which is time-consuming and can be inconvenient and burdensome. Shopping on-line overcomes at least the requirement of being at the POS. With on-line shopping, the user searches the Internet, accesses a retailer/merchant website, selects desired products, places them in a virtual cart, and pays on-line, either directly to the merchant or through a payment provider. A disadvantage of on-line shopping is that the consumer must be in front of a PC or other computing device, such that shopping and payment is confined to an experience in front of the PC. Furthermore, it may be cumbersome and time-consuming for the consumer to enter required information for an on-line payment, which may include a credit card/account number, billing address, etc.

Yet another way is for consumers to locate and purchase products is to use a catalog, newspaper, advertisement pamphlet, or other print media to first locate a product. Once located, the consumer goes to the store or logs into a specified web site to select and pay for the product(s), such as described above. Thus, this method suffers the same disadvantages as the other two methods of either purchase/ payment in person at a physical POS or having to be in front of a computing device for selection and payment.

Thus, there is a need for a way that consumers can select and pay for a desired product without the disadvantages of the conventional methods above.

SUMMARY

In accordance with one embodiment, a system and method includes first capturing an image of a product code, such as by taking a picture of the code with a camera on a phone. In one embodiment, the code is a Quick Response (QR) code that includes sufficient information about the product and price to allow the user to purchase and pay for the product with information from the code. Once captured on the mobile device, the image is processed to obtain the product information, such as price, merchant, and description. The user may then select the product for purchase. Purchase may be accomplished with a simple payment button on the device screen that the user selects. Product and payment information may then be transmitted by the device to a payment provider to process the payment to the appropriate recipient.

These and other features and advantages of the present invention will be more readily apparent from the detailed description of the embodiments set forth below taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 shows a QR code affixed to a tangible medium, which can be captured and used for payment according to one embodiment;

FIG. 2 is a flowchart showing a process for conducting a purchase and payment from a captured QR code according to one embodiment;

FIG. 3 is a flowchart showing a process for conducting a purchase and payment from a captured QR code by a first-time user according to one embodiment;

FIG. 4 is a block diagram of a networked system configured to purchase and pay for an item associated with a captured QR code in accordance with an embodiment of the invention; and

FIG. 5 is a block diagram of a computer system suitable for implementing one or more embodiments of the present disclosure.

Embodiments of the present disclosure and their advantages are best understood by referring to the detailed description that follows. It should be appreciated that like reference numerals are used to identify like elements illustrated in one or more of the figures, wherein showings therein are for purposes of illustrating embodiments of the present disclosure and not for purposes of limiting the same.

DETAILED DESCRIPTION

FIG. 1 shows a two-dimensional product code affixed to tangible medium, such as a piece of paper, container, or product, or even a web page. In one embodiment, the two-dimensional code is a quick response or QR code **102**, created by Denso-Wave of Japan, and the tangible medium is a page **104** from a catalog or magazine. Other types of two-dimensional or other codes may also be suitable, such as the PDF417 code by Symbol Technologies, the DataMatrix code by RVSU Acuity CiMatrix, and the Maxi Code by UPS. QR code **102** contains information about an associated product or service on page **104**. Note that as used herein, product or item refers to both products and services. For example, page **104** may be advertising a specific DVD, CD,

watch, type of clothing, a motorcycle, or virtually any product or service that is available for purchase. Note that QR code can also be displayed on other medium, such as the actual product itself, its container, or a web page. QR codes and other similar codes are able to contain large amounts of information, due in part to data being stored in both the horizontal and vertical directions of the code. In contrast, bar codes store data only in one direction, e.g., horizontally. As an example of the information storage differences, a conventional bar code can only store approximately 20 digits, while a QR code can handle up to several hundred times more information (e.g., over 7000 numeric characters or over 4000 alphanumeric characters). QR codes were created by Denso-Wave of Japan, and additional information can be obtained through Denso-Wave's web site.

Due to the large amounts of information capable of being stored on QR code **102**, specific information may be encoded to convey desired information about the product/service offered for sale. In the example of FIG. 1, page **104** of the magazine may show and briefly describe a product, such as a watch **106**. However, page **104** may not have sufficient area to provide the consumer with all the needed information about the product or the merchant/advertiser may not want to clutter the page for fear of reducing the ad appeal. QR code **102** on page **104** can be encoded to provide information about watch **106** such as detailed product description, a URL link to a website of a merchant offering the watch for sale, a URL link to a website of the watch manufacturer, UPC code for the watch, price, watch options, payment remittance information, etc. Information on QR code **102** may be decoded to provide the user easy access or display to such information, including giving the user an option to pay for the product. Payment information may include merchant name, account information (such as recipient account number or identifier with a payment provider), and price.

FIG. 2 is a flowchart **200** showing processes for making an on-line payment from a unique product code, such as QR code **102** of FIG. 1, according to one embodiment. At step **202**, a consumer or user captures an image of the QR code, such as by taking a picture of the code or scanning the code using a camera on a mobile phone or any device that can capture an image. The QR code contains sufficient information about the product, price, and merchant to enable the user to purchase and pay for the product from the information contained in the product code. The QR code can then be decoded or processed, such as by software in the phone, at step **204**. QR code reader/decoder software is commonly available. Once processed, content from the QR code is displayed on the user device at step **206**.

The type of display can vary depending on the content of the QR code. For example, the user may be directed to a web page of the manufacturer or of a merchant selling the product, where the user can obtain more details about the product. The display may also show a more detailed description of the product, which may include one or more pictures of the product.

Next, various actions can be performed based on the captured QR code, starting with whether the user wants to store information about the product associated with the captured QR code at step **208**. If so, the product information is stored in the device at step **210**, which the user may later access, along with any other stored information about other products or about the same product but from a different store/purchase channel for possible comparison shopping. A determination is also made, at step **212**, whether to send a message (such as SMS), a link to the product, or other

information about the product from the captured QR code to someone else. If so, the user selects the desired transmission and enters the requested information at step **214**. For example, if the user wants to send a link and/or message, the user may enter the recipient's email address, and if the user wants to send a text message, the user enters the phone number of the recipient's device. The selected data is then sent to the recipient at step **216**. Note that steps **208-216**, and other subsequent steps can be performed in any order and are not limited to the sequence shown.

Next, at step **218**, a determination can be made whether the user wishes to purchase the product associated with the captured QR code. This can be done by the user simply selecting a "buy" button or link associated with the product. After deciding whether to purchase the product, a determination can be made, at step **220**, whether to purchase additional products stored on the user's device, such as products associated with previously captured QR codes. If more products are to be purchased, the user selects the desired product(s) at step **222**. The previously stored products may be accessed by date captured, type, price, etc., where the user selects the products by clicking on a box, clicking on a buy button associated with the product, etc.

Once the desired product(s) for purchase have been selected, data is sent from the user's device, such as to a payment provider like PayPal, Inc. of San Jose, Calif., and processed at step **224**. Examples of types of data include an account number of the recipient with the payment provider, although in other embodiments, the account number can be with a bank or other financial institution, payment amount for each selected product, and funding information of the user, such as an account number, user name, password, phone number associated with the user/account, etc. Processing may be debiting the appropriate funds from the user's designated account and crediting the appropriate funds to the recipient's or merchant's designated account(s). The user and/or the merchant may then be notified, at step **226**, that payment has been made and received, such as with an email, text, on-screen confirmation, or voice message. Delivery of the purchased product(s) can then be made by the merchant to the consumer. Note that the delivery can be made at a physical POS or by shipping and could also be a digital download item like software or digital media such as video or music files. For example, if the user scans a QR code of a product, where the product is immediately available, such as at a retail store, the user may take delivery of the product at the POS as soon as payment is made, such as with the process described above.

FIG. 3 is a flowchart **300** showing a method according to another embodiment, where the user does not have an account with the payment provider used to make the payment. At step **302**, the user scans or captures a QR code or other unique product code, using a suitable device, such as a smart phone with a camera/scanner. Information about the product or service contained in the QR code is decoded, and the user is re-directed to a third party site, such as a merchant site, at step **304**. For example, after capturing the QR code, the user's device displays a merchant web site offering the product from the QR code. Once on the site, the user may decide whether to purchase the product, such as with a "buy" button or link, at step **306**. If the user decides not to make the purchase, the user may perform additional actions in step **308**, such as sending a link to the product to another, saving the link for possible later use, etc.

However, if the user decides to purchase the product at step **306**, a determination is made at step **310** whether the user has a pre-approved agreement with the site. This

agreement may include an agreement with a payment provider processing a transaction between the user and the owner of the site, limits on transaction amount, etc. If there is such an agreement with the merchant, the user makes the purchase at step 322, such as following a procedure for making a payment based on the agreement. This may include simply selecting a “pay” or “purchase” button and may include some sort of authentication of the device and/or user. Confirmation of the payment may then be made to the user and/or merchant, followed by transfer of the purchased product from the merchant to the user.

If there is no payment agreement with the merchant, a determination is first made at step 312 whether the user has an account with a payment provider, such as PayPal, Inc. of San Jose, Calif. If so, the user proceeds with a payment flow at step 318. In one example, the user enters requested information on the payment provider site, which may include an account/user identifier, such as a password, PIN, email address, and/or phone number, funding source, and/or amount. Once the payment flow is completed on the payment provider site, the user is re-directed back to the merchant site at step 320. In embodiments, where the payment flow is on the merchant site, this step may be omitted. The purchase is then made at step 322.

If, as determined at step 312, the user does not have an account with a payment provider, the payment provider creates an account flow, at step 314, that the user can follow. For example, a mobile app may be loaded and accessed that prompts the user for various information to enter from the device in order to create the account. After the account is created, the user may fund the account at step 316, such as by designating or specifying a bank account or a credit card account as a funding source and specifying an amount to be transferred from the funding account. The payment process continues at steps 318, 320, and 322, as discussed above.

FIG. 4 is a block diagram of a networked system 400 configured to handle a purchase transaction, such as described above, in accordance with an embodiment of the invention. System 400 includes a user or consumer device 410, a merchant server 440, and a payment service provider server 470 in communication over a network 460. Payment service provider server 470 may be maintained by a payment provider, such as PayPal, Inc. of San Jose, Calif.

User device 410, merchant server 440, and payment service provider server 470 may each include one or more processors, memories, and other appropriate components for executing instructions such as program code and/or data stored on one or more computer readable mediums to implement the various applications, data, and steps described herein. For example, such instructions may be stored in one or more computer readable media such as memories or data storage devices internal and/or external to various components of system 400, and/or accessible over network 460.

Network 460 may be implemented as a single network or a combination of multiple networks. For example, in various embodiments, network 460 may include the Internet or one or more intranets, landline networks, wireless networks, and/or other appropriate types of networks.

User device 410 may be implemented using any appropriate combination of hardware and/or software configured for wired and/or wireless communication over network 460. For example, in one embodiment, user device 410 may be implemented as a personal computer, equipped with or capable of receiving data from a scanner and/or camera, of a user 405 in communication with the Internet. In other embodiments, user device 410 may be implemented as a

wireless telephone, personal digital assistant (PDA), notebook computer, and/or other types of computing devices equipped with or capable of receiving data from a scanner and/or camera.

As shown, user device 410 may include one or more browser applications 415 which may be used, for example, to provide a convenient interface to permit user 405 to browse information available over network 460. For example, in one embodiment, browser application 415 may be implemented as a web browser configured to view information available over the Internet, such as when directed to a URL site from a captured QR code. User device 410 may also include one or more toolbar applications 420 which may be used, for example, to provide client-side processing for performing desired tasks in response to operations selected by user 405. In one embodiment, toolbar application 420 may display a user interface in connection with browser application 415 as further described herein.

In addition, user device 410 may include an image processing application 422 that receives an image captured from a scanner or camera on user device 410 and processes the image to decode data found on the image. As discussed above, the image may be of a QR code 424 or other unique product code containing data sufficient to purchase the product associated with the code. Image processing application 422 may contain software for decoding the code. Code 424 may be displayed on a page, product, product container, product package, web site, or any other form that allows user 405 to scan or photograph code 424 using user device 410.

User device 410 may further include other applications 425 as may be desired in particular embodiments to provide desired features to user device 410. For example, such other applications 425 may include security applications for implementing client-side security features, programmatic client applications for interfacing with appropriate application programming interfaces (APIs) over network 460, or other types of applications. Applications 425 may also include email and texting applications that allow user 405 to send and receive emails and texts through network 460. User device 410 includes one or more user identifiers 430 which may be implemented, for example, as operating system registry entries, cookies associated with browser application 415, identifiers associated with hardware of user device 410, or other appropriate identifiers, such as used for payment/user/device authentication. In one embodiment, user identifier 430 may be used by a payment service provider to associate user 405 with a particular account maintained by the payment service provider as further described herein.

Merchant server 440 may be maintained, for example, by an on-line merchant offering various products and/or services, such as associated with a captured QR code, in exchange for payment to be received over network 460. In this regard, merchant server 440 includes a database 445 identifying available products and/or services (e.g., collectively referred to as items) which may be made available for viewing and purchase by user 405, such as when redirected to the site from a captured QR code. Accordingly, merchant server 440 also includes a marketplace application 450 which may be configured to serve information over network 460 to browser 415 of user device 410. In one embodiment, user 405 may interact with marketplace application 450 through browser applications over network 460 in order to view various products or services identified in database 445, using data from a captured product code.

Merchant server 440 also includes a checkout application 455 which may be configured to facilitate the purchase by

user **405** of goods or services identified by marketplace application **450**. Checkout application **455** may be configured to accept payment information from user **405** and/or from payment service provider server **470** over network **460**.

Payment service provider server **470** may be maintained, for example, by an online payment service provider which may provide payment on behalf of user **405** to the operator of merchant server **440**. In this regard, payment service provider server **470** includes one or more payment applications **475** which may be configured to interact with user device **410** and/or merchant server **440** over network **460** to facilitate the purchase of goods or services by user **405** of user device **410** from merchant server **440**. In one embodiment, payment service provider server **470** may be provided by PayPal, Inc.

Payment service provider server **470** also maintains a plurality of user accounts **480**, each of which may include account information **485** associated with individual users. For example, account information **485** may include private financial information of users of devices such as account numbers, passwords, phone numbers, credit card information, bank information, or other financial information which may be used to facilitate online transactions by user **405**. Advantageously, payment application **475** may be configured to interact with merchant server **440** on behalf of user **405** during a transaction with checkout application **455** to track and manage purchases made by users.

Payment application **475** may include a mobile payment processing application **490** which may be configured to receive information from a mobile user device and/or merchant server **440** for storage in a payment database **495**. Payment application **475** may be further configured to match data received from a mobile device with information stored in payment database **495** for payment authentication and processing. As discussed this data may include the user's device phone number, email, password, and/or PIN.

Payment service provider server **470** may further include a first-time user payment application **496** which may be configured to generate and process a request for payment received from a user device of a user who does not have an account with the payment provider. In one embodiment, first-time user payment application **496** may be configured to perform the steps described above for making payment to a merchant from a first-time user.

FIG. **5** is a block diagram of a computer system **500** suitable for implementing one or more embodiments of the present disclosure. In various implementations, the user device may comprise a personal computing device (e.g., a personal computer, laptop, cell phone, PDA, etc.) capable of communicating with the network. The merchant and/or payment provider may utilize a network computing device (e.g., a network server) capable of communicating with the network. It should be appreciated that each of the devices utilized by users, merchants, and payment providers may be implemented as computer system **500** in a manner as follows.

Computer system **500** includes a bus **502** or other communication mechanism for communicating information data, signals, and information between various components of computer system **500**. Components include an input component **504** that processes a user action, such as selecting keys from a keypad/keyboard, selecting one or more buttons or links, etc., and sends a corresponding signal to bus **502**. A transceiver **506** transmits and receives signals between computer system **500** and other devices, such as a merchant server, payment provider server, or another user device. In one embodiment, the transmission is wireless,

although other transmission mediums and methods may also be suitable. An image capture mechanism **508**, such as a scanner or camera, captures an image, such as a QR code. A processor **512**, which can be a micro-controller, digital signal processor (DSP), or other processing component, processes these various signals, such as for display on computer system **500** or transmission to other devices via a communication link **518**. The captured image from mechanism **508** may be processed within mechanism **508** or by processor **512**.

Components of computer system **500** also include a system memory component **514** (e.g., RAM) and a static storage component **516** (e.g., ROM). Computer system **500** performs specific operations by processor **512** and other components by executing one or more sequences of instructions contained in system memory component **514**. Logic may be encoded in a computer readable medium, which may refer to any medium that participates in providing instructions to processor **512** for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. In various implementations, non-volatile media includes optical or magnetic disks, volatile media includes dynamic memory, such as system memory component **514**, and transmission media includes coaxial cables, copper wire, and fiber optics, including wires that comprise bus **502**. In one example, transmission media may take the form of acoustic or light waves, such as those generated during radio wave, optical, and infrared data communications.

Some common forms of computer readable media includes, for example, floppy disk, flexible disk, hard disk, magnetic tape, any other magnetic medium, CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, RAM, PROM, EPROM, FLASH-EPROM, any other memory chip or cartridge, carrier wave, or any other medium from which a computer is adapted to read.

In various embodiments of the present disclosure, execution of instruction sequences to practice the present disclosure may be performed by computer system **500**. In various other embodiments of the present disclosure, a plurality of computer systems **500** coupled by communication link **518** to the network (e.g., such as a LAN, WLAN, PTSN, and/or various other wired or wireless networks, including telecommunications, mobile, and cellular phone networks) may perform instruction sequences to practice the present disclosure in coordination with one another.

Where applicable, various embodiments provided by the present disclosure may be implemented using hardware, software, or combinations of hardware and software. Also, where applicable, the various hardware components and/or software components set forth herein may be combined into composite components comprising software, hardware, and/or both without departing from the spirit of the present disclosure. Where applicable, the various hardware components and/or software components set forth herein may be separated into sub-components comprising software, hardware, or both without departing from the scope of the present disclosure. In addition, where applicable, it is contemplated that software components may be implemented as hardware components and vice-versa.

Software, in accordance with the present disclosure, such as program code and/or data, may be stored on one or more computer readable mediums. It is also contemplated that software identified herein may be implemented using one or more general purpose or specific purpose computers and/or computer systems, networked and/or otherwise. Where

applicable, the ordering of various steps described herein may be changed, combined into composite steps, and/or separated into sub-steps to provide features described herein.

The foregoing disclosure is not intended to limit the present disclosure to the precise forms or particular fields of use disclosed. As such, it is contemplated that various alternate embodiments and/or modifications to the present disclosure, whether explicitly described or implied herein, are possible in light of the disclosure. Having thus described 5
embodiments of the present disclosure, persons of ordinary skill in the art will recognize that changes may be made in form and detail without departing from the scope of the present disclosure. Thus, the present disclosure is limited only by the claims. 10

What is claimed is:

1. A user device, comprising:
 - an optical sensor;
 - an electronic storage;
 - one or more processors; and
 - a non-transitory computer-readable medium having stored thereon instructions that are executable by the one or more processors to cause the user device to perform operations comprising:
 - capturing, by the optical sensor, a machine-readable 25
image corresponding to an item;
 - decoding the machine-readable image to determine, solely from the machine-readable image, item information usable to facilitate a purchase of the item from a seller, the item information including item identifier information and a uniform resource locator (URL) specifying a web page at which the item can be purchased using the user device;
 - storing the item information in the electronic storage 30
for later retrieval; and
 - in response to a user request at the user device, causing a purchase transaction for the item to be submitted via the URL, the purchase transaction including information specifying identifying information for an account of a user of the user device usable to fund the purchase transaction.
2. The user device of claim 1, wherein the operations further comprise:
 - in response to decoding the machine-readable image, 45
automatically causing a software application of the user device to navigate to the web page specified by the URL.
3. The user device of claim 1, wherein the user request is made via one or more user interaction elements of the web 50
page.
4. The user device of claim 1, wherein the operations further comprise:
 - responsive to the user request, redirecting a software 55
application of the user device from a display of the web page to a display of a service provider web page, wherein the service provider web page includes an encrypted account login interface for the account of the user.
5. The user device of claim 1, wherein the operations 60
further comprise:
 - retrieving the item information after storing the item information in response to a user action taken using the user device.
6. A method, comprising:
 - capturing, by an optical sensor of a user device of a user, 65
a machine-readable image corresponding to an item;

- decoding, by the user device, the machine-readable image to determine item information usable to facilitate a purchase of the item from a seller, the item information including item identifier information and a uniform resource locator (URL) specifying a web page at which an electronic transaction to purchase the item can be initiated using the user device;
 - storing the item information in an electronic storage of the user device for later retrieval; and
 - in response to a user request at the user device, causing the electronic transaction to purchase the item to be submitted via the URL, the electronic transaction including information specifying identifying information for an account of the user usable to fund the electronic trans- 15
action.
7. The method of claim 6, wherein the machine-readable image is a two-dimensional quick response (QR) code.
 8. The method of claim 7, wherein the two-dimensional QR code is printed on a physical real-world surface.
 9. The method of claim 8, wherein the physical real-world 20
surface is a page of a printed publication.
 10. The method of claim 6, further comprising:
 - causing a software application of the user device to navigate to a service provider web page with a secure login element for the account of the user.
 11. The method of claim 10, further comprising:
 - redirecting the software application from the service 25
provider web page to the web page specified by the URL to complete the electronic transaction.
 12. The method of claim 6, wherein the item information includes merchant account information specifying an identifier for a payment account of a merchant.
 13. The method of claim 6, wherein the item information includes a unique product identifier for the item.
 14. The method of claim 6, wherein the machine-readable 30
image is physically affixed to the item.
 15. A non-transitory computer readable medium having instructions stored thereon that are executable by a computer system to cause the computer system to perform operations comprising:
 - capturing, via an optical sensor of the computer system, a 35
machine-readable image corresponding to an item;
 - decoding the machine-readable image to determine, from the machine-readable image, item information usable to facilitate a purchase of the item from a seller, the item information including item identifier information and a uniform resource locator (URL) specifying a web page at which the item can be purchased using a user device of a user;
 - storing the item information in an electronic storage of the 40
computer system for retrieval; and
 - in response to a user request, causing a purchase transaction for the item to be submitted via the URL, the purchase transaction including information specifying identifying information for an account of the user usable to fund the purchase transaction.
 16. The non-transitory computer readable medium of claim 15, wherein the operations further comprise:
 - in response to decoding the machine-readable image, 45
automatically causing a software application of the computer system to navigate to the web page specified by the URL.
 17. The non-transitory computer readable medium of claim 15, wherein the user request is made via one or more 50
user interaction elements of the web page.
 18. The non-transitory computer readable medium of claim 15, wherein the operations further comprise:

responsive to the user request, redirecting a software application of the computer system from a display of the web page to a display of a service provider web page, wherein the service provider web page includes an encrypted account login interface for the account of the user. 5

19. The non-transitory computer readable medium of claim **15**, wherein the operations further comprise: retrieving the item information after storing the item information in response to a user action taken using the computer system. 10

20. The non-transitory computer readable medium of claim **15**, wherein the item information includes a unique product identifier for the item.

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